**1. Research**

Problem Definition:

Helping the librarian to manage the data of the new subscribers according to their respective plans.

Addition of customer ID, subscriptions, date of issue, date of return(15 days), phone number and pricing.

Once the new membership ID is created then the newly joined customer is given a choice for the books according to their joined plans for 1 book, 2 books or 3 books issuing facility.

Key Requirements:

- Input Handling:This is a POV of a librarian who is inputting the new membership joinings.

- Eligibility Check: The member is allowed to accept the number of books according to the plans they have chosen.

- Fees Adjustment: Each plan is according to the flexibility for the number of books they can issue.

Websites we used were - Quora.com, Stackoverflow.com, shiksha.com, w3schools.com, geeksforgeeks, google ai and Github for publishing.

**2. Analysis**

The program handles a straightforward flow for determining adding the new member to the library.

- The librarian asks the member about the required documents and information.

- Librarian asks about their personal information, choice of plan, and plan details.

-The new member chooses the plan according to his needs and pays right away.

-As soon as the plan is confirmed, the user is advised to select the number of books according to their plans.

**3. Ideate**

Several ideas were considered for building and improving this system:

1. Input of Information: Personal information as well as documents.

2. Modular Design: User friendly design for the librarian.

3. Extensibility: The system should display all the information of the user after issuing of the books is completed.

4. Reminder: The system gives a message of the returning the book after 15 days.

---

**4. Build**

Struct Design:

The New Users Information will be saved in the system for future use and maintaining proper data for the Library.The Data include,

1)Name of Customer

2)Customer’s Phone number

3)Customer’s Address: his Current address and and for address proof Submit Aadhar Card Xerox.

4)Customer Type: Depending Upon the customer’s Subscription he/she will be allotted with the number of books he/she can borrow at a time.

5)Number of units will be displayed according to the purchased subscription with the row in which the name of the book will be displayed.

6)After the purchase a bill will be generated in with the subscription,number of books and name of the book with their price will be printed

Control Flow:

The program contains rand() function for the unique customer id generation every time when the new user will come and that id will be saved in the system with the user data for future use.

**5. Test**

The testing phase focused on verifying different scenarios:

1)After the new user data is uploaded in the system the system will store the data and link the data with the unique id so that when the customer will visit the library again he/she will only give their id to the librarian and all the details will show up which were taken by the librarian during the registration.

**6. Implementation**

The final implementation involved creating a clean and user-friendly console interface. Key points:

We have published code on GITHUB

7 Maintenance:

In this we will apply 25% maintenance rule that is if maintenance is more than 25% then replace the module, upgrade or rebuild the software.

---